Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/494,940	HARA ET AL.
	Examiner	Art Unit	
	John M. Villecco	2612	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>17 June 2004</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>4,5,18-20 and 28-30</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>4,5 and 28-30</u> is/are allowed.

6)☒ Claim(s) <u>18-20</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>01 February 2000</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

       1.☒ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION II

Response to Arguments

1.   Applicant's arguments filed June 17, 2004 have been fully considered but they are not

persuasive.

2.   Regarding *claim 18*, applicant has rewritten the claim to incorporate the base claim

(claim 1) and each of the intervening claims from which claim 18 depends. Applicant argues

that Nakagawa fails to disclose that the compression ratio is set based on the *automatically*

determined number of phototaking operations. It appears that the applicant is pointing out the

fact the compression ratio in Nakagawa is not automatically set based on the number of

phototaking operations. It is set based on the number of phototaking operations manually

entered by the user. However, when taken as a whole, Kodama teaches that the number of

phototaking operations is automatically set based on the amount of detected handshake and

exposure time. Nakagawa teaches the ability to automatically set a compression ratio based on

the number of phototaking operations. Therefore, Nakagawa is merely used to show that it is

well known in the art to adjust the compression ration based on the number of phototaking

operations. One of ordinary skill in the art could easily make the connection of setting the

compression ratio, as in Nakagawa, based on the automatically determined number of

phototaking operations disclosed in Kodama. Thus, the combination of Kodama and Nakagawa

does teach setting a compression ratio based upon the automatically determined number of

phototaking operations.

3.   As for *claim 19*, applicant argues that the combination of Kodama and Nakagawa fail to explicitly disclose that image data except a standard image data are compressed and stored in the memory. However, the phrase "image data except and standard image data" is extremely broad. In this case standard image data is interpreted to be the final composited image data. Kodama discloses that each individual image is first stored in the memory (5) and then the memory is accessed to determine the amount of blur using the blur detecting means (6). See paragraph 0013. Once the image is composited it is permanently stored in the external memory (20). See paragraph 0036. Therefore, each individual image before blur detection is interpreted to be the image data except standard image data.

4.   For the reasons stated above the rejections for claims 18-20 from the previous office action with be repeated below.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   **Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodama (Japanese Publ. No. 09-261526 A) in view of Nakagawa (U.S. Patent No. 5,335,016).**

7.   Regarding *claim 19*, Kodama discloses a camera system for memorizing a plurality of image data which includes a memory region (5) for memorizing data. Kodama determines a

number of images to be captured and stored each of the images in the memory region (5). The

phrase "image data except and standard image data" is extremely broad. In this case standard

image data is interpreted to be the final composited image data. Kodama discloses that each

individual image is first stored in the memory (5) and then the memory is accessed to determine

the amount of blur using the blur detecting means (6). See paragraph 0013. Once the image is

composited it is permanently stored in the external memory (20). See paragraph 0036.

Therefore, each individual image before blur detection is interpreted to be "the image data except

standard image data".

Kodama, however, fails to explicitly disclose a controller for compressing image data

into the memory, wherein the controller selects a compression ratio corresponding to a condition

when the image data are taken. Nakagawa, on the other hand, discloses that it is well known in

the art to set a compression ratio based on the number of images set. This allows more efficient

use of the memory. Therefore, it would have been obvious to one of ordinary skill in the art to

adjust the compression ratio of Kodama based on the number of images taken so that the

memory usage is optimized. See column 17, line 67 to column 18, line 6.

8.   As for *claim 20*, Nakagawa discloses that the compression ratio is adjusted based upon

the number of image taking operations.

9.   **Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamamura**

et al. (U.S. Publ. No. 2003/0133021) in view of Kodama (Japanese Publ. No. 09-261526 A)

and further in view of Ohta et al. (U.S. Patent No. 5,689,611) and Nakagawa (U.S. Patent

No. 5,335,016).

Regarding *claim 18*, Hamamura discloses a CCD (103) for taking an image, a luminance

sensor (12) for sensing the luminance of the object, and an underexposure unit (212) for judging

whether a proper exposure time is longer than a predetermined exposure time. The exposure

time setting unit (211) sets an exposure time of the CCD. When the underexposure determining

unit determines that the suitable exposure time is greater than a hand vibration time limit, the

camera adjusts the gain to accommodate. See paragraphs 29-31.

Hamamura, however, fails to disclose that instead of changing the gain after the exposure

exceeds a hand vibration time limit, a plurality of images are taken to accommodate for the hand

shake. Kodama, on the other hand discloses that it is well known in the art to take multiple

exposures of the same scene based on the amount of handshake and whether or not the calculated

exposure time exceeds a handshake time limit. It is well known that increasing the gain of a

system can increase the noise in the image. Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to capture multiple images and

combine them to form a high quality image instead of increasing the gain so that an image that is

free of increased noise is produced. See paragraphs 13 and 17-26. Additionally, Kodama

teaches that the plurality of image data of the same object are composited for forming a single

image. See paragraph 15. Furthermore, Kodama discloses the ability to determine the amount of

blurring and then aligning each of the images after determining how much the images are offset

from each other. The process of determining the offset of the images before combining is

interpreted to be data correction. See Figure 4.

Furthermore, neither of the aforementioned references discloses that the image data and

data corresponding to the image are stored and then composited after completing all of the image

taking operations. Ohta, on the other hand, discloses that it is well known in the art to store both the images and the motion vector data to be used in reproduction at a later time. In this case, the later time would be after the completion of all of the image taking operations. Clearly, when both of the image data and the other data are stored separately without using the other data in processing the image, the processing time can be reduced for image pickup. See column 9, line 64 to column 11, line 12. Although used for generating panoramic images it would have been obvious to implement this system in a shake correcting camera so processing time could be reduced. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to complete the photographing of the images and the collection of data corresponding to the image before compositing so that processing time in the image capture routine can be reduced and the production of the composite image can be performed at a later time.

Finally, none of the aforementioned references discloses that the images are compressed before storing them in memory. Nakagawa, on the other hand, discloses that it is well known in the art to compress images before storing them in memory. This allows more efficient use of the memory. Therefore, it would have been obvious to one of ordinary skill in the art to compress the images before storing them so that memory is conserved. See column 17, line 67 to column 18, line 6. Additionally, Nakagawa discloses that it is well known in the art to set a compression ratio based on the number of images set. This allows more efficient use of the memory. Therefore, it would have been obvious to one of ordinary skill in the art to adjust the compression ratio of Kodama based on the number of images taken so that the memory usage is optimized. See column 17, line 67 to column 18, line 6.

Allowable Subject Matter

10.   Claims 4, 5, 28, 29, and 30 are allowed.

11.   The following is an examiner's statement of reasons for allowance:

Regarding *claims 4 and 5*, the primary reason for allowance is that the prior art fails to teach or reasonably suggest the method of calculating the control exposure time and the number of image taking operations.

As for *claim 28*, the primary reason for allowance is that the prior art fails to teach or reasonably suggest that the correcting of the image shake around the two axes perpendicular to the optical axis are executed by a software process and the rotating of the image data around the optical axis is performed by a hardware process.

With regard to *claim 29*, the primary reason for allowance is that the prior art fails to teach or reasonably suggest that the rotation shakes are corrected by affine conversion at the same time.

Regarding *claim 30*, the primary reason for allowance is that the prior art fails to teach or reasonably suggest that that the region from which the image data are read out is gradually enlarged corresponding to the increase of the number of image taking operations.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any response to this final action should be mailed to:

> Box AF
> Commissioner of Patents and Trademarks
> Washington, D.C. 20231

or faxed to:

> (703) 308-6306, (for formal communications; please mark **"EXPEDITED PROCEDURE"**; for informal or draft communications, please label **"PROPOSED"** or **"DRAFT"**)
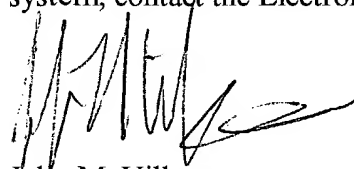
> Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Villecco whose telephone number is (703) 305-1460. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John M. Villecco
September 30, 2004

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